ATTRIBUTION STYLE, FEEDBACK, AND TASK PERSISTENCE

The Effects of Feedback and Attribution Style on Task Persistence

Chris Rozek

Gustavus Adolphus College

Abstract

College students were tested for perfectionism level and attribution style to see if these surveys could be predictive of task persistence. Feedback conditions (positive/negative/none) were also tested for effects on task persistence. Results showed that perfectionism level did not predict task persistence, internal problem cause attribution style did predict task persistence, and feedback effects were not significant. Additionally, there were no significant gender differences between conditions.

Attribution Style, Feedback, and Task Persistence

Persistence is an attribute valued by many. What makes some people persist longer than others? Are internal factors, such as personality traits, or external situational factors, such as feedback, responsible for persistence? Could the answer include a combination of both? These are the questions this experiment attempted to answer.

Persistence has most often been studied in terms of cultural differences. Blinco (1992) found that Japanese elementary school children showed greater task persistence than their American counterparts. School type and gender were not factors in moderating task persistence. This left culture as the remaining variable. Heine et al (2001) furthered this idea by testing older American and Japanese subjects on responses after success or failure on task persistence. Japanese subjects were once again found to persist longer (in post-failure conditions), and this was speculated to be because they were more likely to view themselves as the cause of the problem. If they were the cause of the problem, they could also solve the problem themselves; although, this could only be accomplished through work and persistence. Americans were more likely to believe that outside factors were the cause of failure.

These cultural studies hinted that task persistence may be predictable based on attribution style. A later experiment showed that attribution style and perfectionism level can be correlated with final grades in college-level classes (Blankstein & Winkworth, 2004). This effect was more prominent with males than with females.

Attributional style first began being commonly measured in 1982 when Peterson et al created the Attributional Style Questionnaire. This survey determined whether a person was more likely to attribute events internally (personal factors) or externally (situational factors).

Although the ASQ was used for many years, recently, a new questionnaire measuring attribution style has been released. Stepleman et al (2005) created the Attribution of Problem Cause and Solution Scale (APCSS). The APCSS uses Brickman's (1982) model of attribution. This more defined look at attribution creates two scales of measurement for internal and external attributions: one for problem causes and one for problem solutions.

Many experiments about feedback and task performance have been completed over the years. Shanab et al (1981) and Elawar & Corno (1985) found that both positive and negative feedback affect subjects equally in increasing positive results of task performance. Fewer studies have looked at the effects of similar feedback on task persistence. Dogdson and Wood (1998) found that participants with high self-esteem responded to negative feedback with greater task persistence than participants with low self-esteem. Miller and Hom (1990) showed that failure conditions lowered task persistence unless extrinsic incentives were given to students.

This study looks at the effects of attribution style, perfectionism level, and feedback on task persistence. Past studies have hinted at internal attributions leading to greater task persistence (Heine et al, 2001). Perfectionism has been correlated with higher grades in college classes (Blankstein & Winkworth, 2004). Feedback is, generally, linked with increased levels of task performance (Shanab et al, 1981; Elawar & Corno, 1985). Because of these findings, I hypothesize that subjects with internal attribution styles, as measured by the APCSS, higher levels of perfectionism, and any form of feedback will show greater task persistence.

Methods

Participants

The participants were 68 undergraduate psychology students (30 male and 38 female) from a small liberal arts college in the Midwest. They received extra credit for volunteering.

Participants were randomly assigned to the feedback conditions (positive-37%, negative-37%, and no feedback-26%).

Materials

Two surveys, two anagram tasks, and a computer program were used and/or created. The two surveys were the Almost Perfect Scale-Revised (Slaney et al, 2001) and the APCSS (Stepleman et al, 2005). The first anagram task used forty five letter words scrambled by a computer program. The second anagram task used three seven letter words (less common than the previous five letter words) and two sets of seven letters that could not be combined to create a word. A computer program was created to combine these tasks into one interface. The program started with a screen in which subject number, gender, and condition were selected. Next, the Almost Perfect Survey and APCSS were given, question by question. After that, the first anagram task was given. This was followed by feedback and then the second task. The last screen informed the participant that the experiment had been completed. Data was recorded via .txt files automatically from this program.

Design

The four factors in this experiment were gender, feedback response, level of perfectionism, and attribution style with levels being male/female, positive/negative/none, high/low, and internal/external on cause and solution continuums.

Procedure

Students were told they were signing up for an experiment about the effects of timing on task performance before the experiment. All experimental sessions were held at night between the hours of five and nine. Consent was given and the computer program was started for each participant. The program began with the Almost Perfect perfectionism scale survey. Next,

participants filled out the APCSS (attribution style) questionnaire. After that, the first task was given. It consisted of completing as many anagrams as possible within five minutes. There were a possible of forty five letter anagrams that could be completed in this time (highest achieved was 38). Immediately following this task, the program randomly gave either positive, negative, or no feedback. Positive and negative feedback came in the form of "You scored above average" or "You scored below average," respectively. Task two came next and consisted of completing five seven letter anagrams. Five minute time limits were given to complete each of these. The first three anagrams were of a higher difficulty level than the previous words while the last two were unsolvable. This task was completed, the program was ended, and participants were debriefed.

Results

Analysis was done to look for predictive value of perfectionism levels and attribution style on task persistence. To do this, average times on the last two anagram tasks (which had no solution) were compared between groups (perfectionist types: standards, order, discrepancy AND attribution styles: internal/external problem cause attributions and internal/external problem solution attributions) and genders.

Figures 1-3 show the differences between high and low scores of perfectionism types. No differences were significant in these cases (discrepancy, order, standards).

Attribution style was tested to see about a significant relationship with unsolvable task time. Having an internal problem solution attribution style was not found to be significantly different from having an external problem solution attribution style. Significant findings were found as participants with internal problem cause attribution styles persisted longer than participants with external problem cause attribution styles, $F(1,63) = 9.67$, $p<.01$. MS =

49619.395. This is shown in Figure 4. The interaction between problem cause attribution styles and gender approaches significance, $F(1,63) = 2.16$, $p<.15$. MS = 11081.34. Figure 5 shows this best.

Three levels of feedback were looked at for differences on task persistence. Differences between positive, negative, and no feedback conditions were minimal and showed no significant findings, $F(2,61) = 0.234$, $p>.05$. MS = 1351.611. There were larger differences both between genders and in the interaction between gender and feedback conditions. Tables 1 and 2 show the averages for these gender differences. Figure 6 shows the nearly significant interaction, $F(2,61) = 1.991$, $p<.15$. MS = 11498.33. Gender differences also neared significance, $F(1,61) = 2.446$, $p<.13$.

Discussion

While not all of the results were significant, the overall direction of results showed trends that could be helpful to learning about who is more likely to persist and what could influence persistence. On average, males persisted longer than females while positive feedback and no feedback conditions produced more persistence than negative feedback. Previous studies conflicted with this data; it was more common for any type of feedback to impact participants than no feedback (Shanab et al, 1981; Elawar & Corno, 1985).

One of the main goals of this experiment was to attempt to find a way to predict who shows more task persistence. While the perfectionism scale failed to accomplish this task, the APCSS produced significant results. Participants with the internal problem cause attribution style could predictably persist longer than those with external styles. In this way, a person could be given the APCSS, and we could find out their likelihood to be someone who has greater persistence.

These results both negate and support some of the hypotheses. It was predicted that greater perfectionism scores would result in greater task persistence, but this turned out not to be the case. Internal attribution style did go along with greater task persistence, so that hypothesis was supported.

Interestingly, the difference in males and females and the different attribution styles to task persistence was almost significant. Basically, females with different attribution styles differed much less than males in terms of task persistence (Figure 5).

This experiment indicates that unchangeable and internal factors, such as gender and attribution style, are more important than outside situational factors, such as feedback, on predicting task persistence. It was expected that both types of factors would have an effect, but attribution style, alone, predicted significant results.

There are parts of this topic that could be further researched and parts of this experiment that could be improved. New areas to research could include using different tasks to show persistence (tasks of interest v.s. non-interest, academic tasks, physical tasks, etc.) or using different factors to check for predictive value, such as self-efficacy belief, situational factors (anchoring effects, self-esteem at time of measurement, etc.), and motivation style. A reason why there were no significant differences found between feedback conditions, when most research shows there should be, could have been that the feedback given to subjects was not impactful enough. Instead of telling them that they performed “above” or “below” average, a more meaningful statement could have been used that gave the same type of feedback with more power. A problem with researching the attribution styles was that no subjects were found with the combination external problem solution attribution style and internal problem cause attribution style while only three subjects were found to have both external problem solution

attribution styles and external problem cause attribution styles. With few subjects in these categories, it was impossible to test for differences there. A larger subject pool might help fix this problem along with creating more power in all tests. Having subjects other than students from a private liberal arts college may also help with generalizability of results.

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Table 1.

Average Unsolvable Question Time (in seconds) and Gender

Male	89.87
Female	61.03
Total	73.94

Table 2.

Average Unsolvable Question Time (in seconds) and Feedback

Positive	80.28
Negative	64.46
No Feedback	78.56
Total	73.94

Figure Captions

Figure 1. Average unsolvable task time based on response to discrepancy perfectionism scores (high or low).

Figure 2. Average unsolvable task time based on need for order perfectionism scores (high or low).

Figure 3. Average unsolvable task time based on standards perfectionism scores (high or low).

Figure 4. Average unsolvable task time differences between males and females in internal and external problem cause attribution styles.

Figure 5. Error bar chart showing the interaction between gender and problem cause attribution style.

Figure 6. Gender and feedback group differences in average unsolvable task time.

Figure 1.

Response to Discrepancy Perfectionism Score Differences on Average Unsolvable Task Time

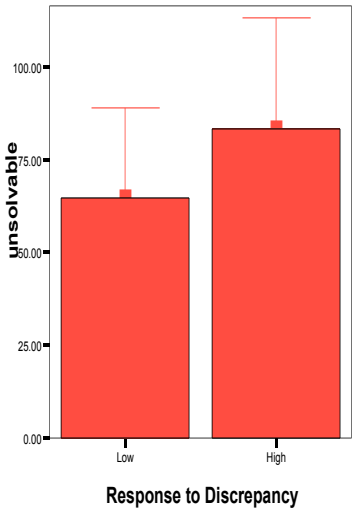

Figure 2.

Need for Order Perfectionism Score Differences on Average Unsolvable Task Time

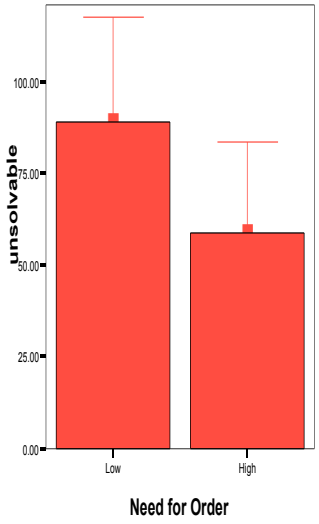

Figure 3.

Standards Perfectionism Score Differences on Average Unsolvable Task Time

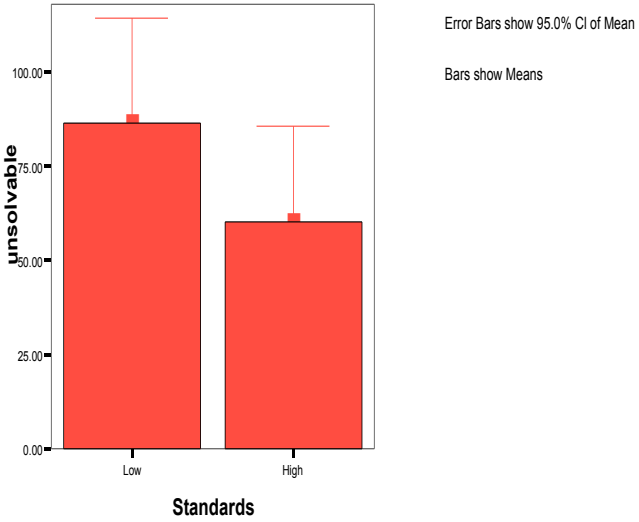

Figure 4.

Problem Cause Attribution Style Differences on Average Unsolvable Task Time

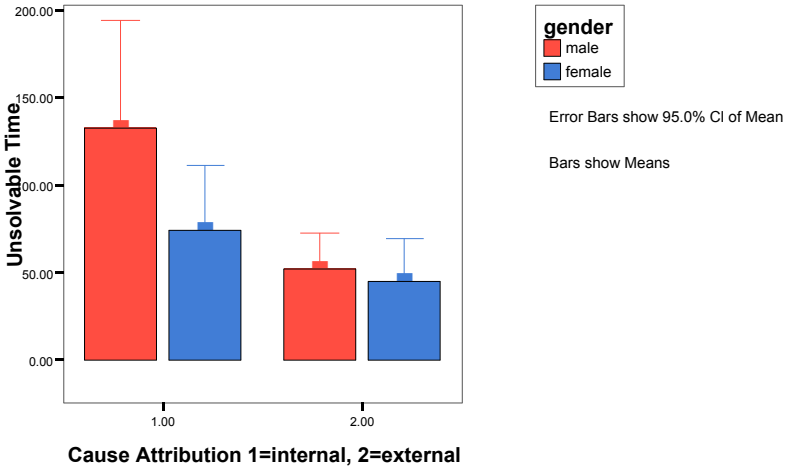

Figure 5.

Gender Differences in Problem Cause Attribution Styles on Average Unsolvable Task Time

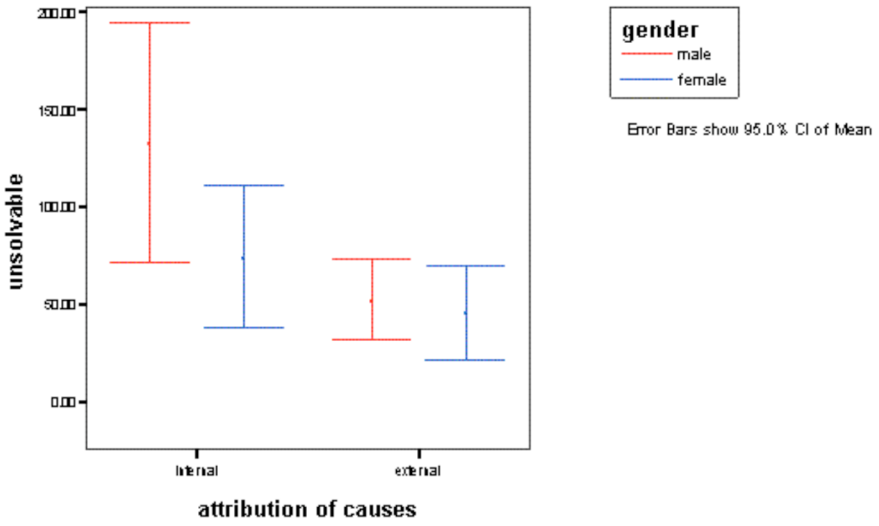

Figure 6.

Gender Differences in Feedback Conditions on Average Unsolvable Task Time